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Coding Information

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Title: Power Steering Idler Gear Assembly and Idler Shaft Replacement

Applies To: MaxxForce 7 (EPA 10) and MaxxForce 7 (EPA 10) with HD-OB

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

6/26/2015 - Initial Article Release

DESCRIPTION

This document will guide the user through the replacement of the power steering idler gear assembly and idler shaft.

SYMPTOM(s)

Not Applicable

SPECIAL TOOL(s) / SOFTWARE

Not Applicable

SERVICE PARTS INFORMATION

Kit Description	Part Number	Qty	Notes
Kit, Power Steering Idler and Shaft	2512869C91	1	Engine Serial Numbers prior to 5345392 require additional parts to perform this procedure.

Power Steering Idler and Shaft Kit (2512869C91) Contents:

Description	Part Number	Qty
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Gear Assembly Power Steering Idler	7080817C1	1
Shaft Power Steering Idler	7080556C1	1
Sealant - Threadlocker 277 10.0 ml Bottle	LOC21434	1
Gasket, Rear Seal Carrier	1835732C1	1
Seal, Oil Crankshaft Rear (Service)	1879038C1	1
Reference Sheet	4328214R1	1

Engine Serial Numbers prior to 5345392 will require the following additional parts not included in kit:

Description	Part Number	Qty
Carrier, Crankshaft Assembly Rear	7080819C91	1
Pump, Power Steering Assembly	3960900C91	1

DIAGNOSTIC STEP(s)

Not Applicable

REPAIR STEP(s)



WARNING:

To prevent property damage, personal injury, and / or death, park vehicle on hard flat surface, turn engine off, set parking brake, and install wheel chocks to prevent vehicle from moving in both directions.



WARNING:

To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under vehicle supported only by jacks. Jacks can slip or fall over.



WARNING:

To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

**WARNING:**

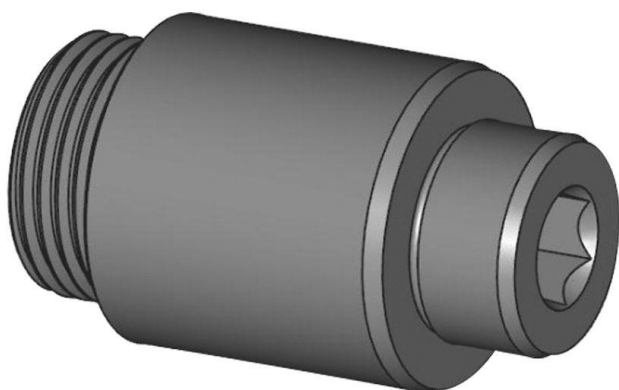
To prevent property damage, personal injury, and / or death, keep flames away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

**WARNING:**

To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

INSPECTION:

1. Bring vehicle into shop and park on flat surface.
2. Shift transmission to Park or Neutral, set parking brake.
3. Install wheel chocks.
4. Unlatch and open hood.
5. Locate Engine Serial Number (ESN):
 - Engines with ESN 5345392 or greater will only require kit 2512869C91.
 - Engines with ESN prior to 5345392 will require additional parts (7080819C91 and 3960900C91) to perform this procedure.

REMOVAL PROCEDURE:

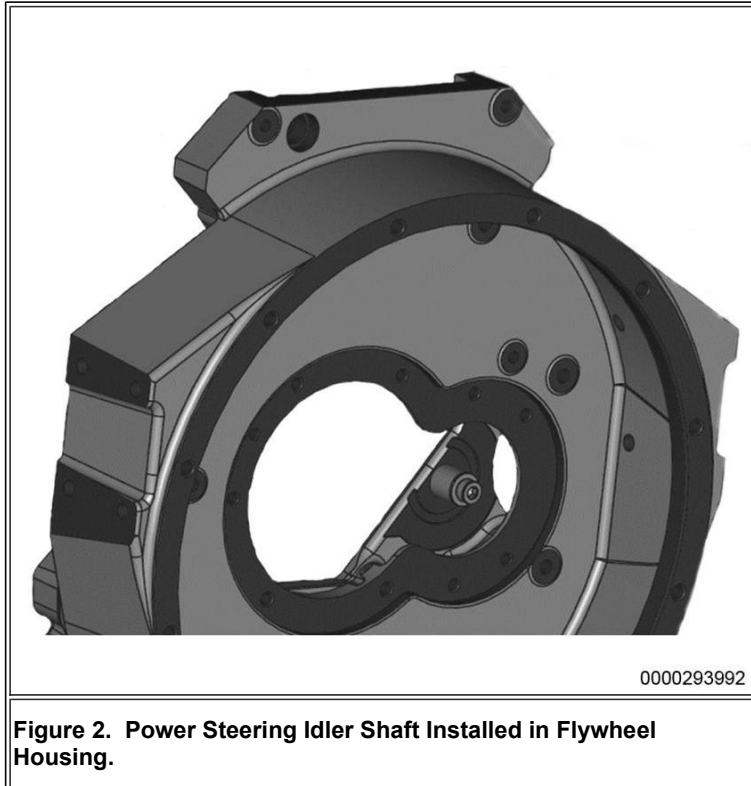
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Figure 1. Power Steering Idler Shaft.

1. Remove transmission. Refer to appropriate manual for transmission installed on vehicle.
2. **Engines with ESN 5345392 or greater**, remove power steering idler gear assembly, and flywheel housing. Refer to [Engine Service Manual, 2010 MaxxForce® 7, 0000002383](#). Discard power steering idler gear assembly.
3. **Engines with ESN 5345392 or greater**, remove power steering idler shaft (Figure 1). Discard power steering idler shaft.

4. **Engines with ESN prior to 5345392**, remove power steering pump. Discard power steering pump.
5. **Engines with ESN prior to 5345392**, remove rear crankcase carrier assembly, power steering idler gear assembly, and flywheel housing. Refer to [Engine Service Manual, 2010 MaxxForce® 7, 0000002383](#). Discard rear crankcase carrier assembly.
6. **Engines with ESN prior to 5345392**, remove power steering idler shaft. Discard power steering idler shaft.

INSTALLATION PROCEDURE:



NOTE:

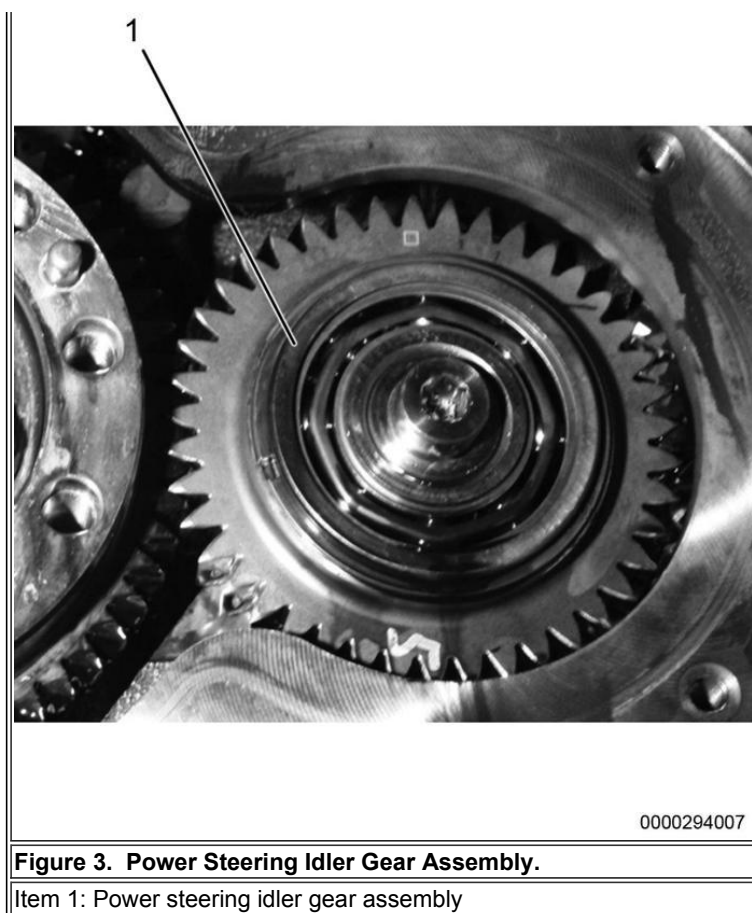
See LOCTITE® Technical Data Sheet for disassembly and cleanup of LOCTITE® 277 in threaded fasteners.

1. **Engines with ESN 5345392 or greater**, apply LOCTITE® 277 to threads and hand tighten kit-supplied power steering idler shaft (Figure 1) in flywheel housing in correct location (Figure 2).

NOTE:

Engines with ESN prior to 5345392, DO NOT attempt to reuse snap rings when installing the kit-supplied idler shaft. The gear cover assembly has been designed to retain the gear onto the shaft without the use of a snap ring.

2. **Engines with ESN prior to 5345392**, apply LOCTITE® 277 to threads and hand tighten kit-supplied power steering idler shaft (Figure 1) in flywheel housing in correct location (Figure 2).
3. Using torque wrench and 8 mm Allen socket, tighten power steering idler shaft to 60 - 73 lb-ft (80 - 98 N·m).



CAUTION:

To prevent property damage, install power steering idler gear assembly with circular witness groove facing out.

4. Install kit-supplied power steering idler gear assembly (Figure 3, Item 1) onto kit-supplied power steering idler shaft.
5. Verify correct gear orientation and gear tooth engagement.
6. Perform backlash test for power steering idler gear assembly. Refer to [Engine Service Manual, 2010 MaxxForce® 7, 0000002383](#).
7. **Engines with ESN 5345392 or greater**, install flywheel housing, power steering idler gear assembly, kit-supplied crankshaft rear oil seal carrier and gasket, and rear crankcase carrier assembly. Refer to [Engine Service Manual, 2010 MaxxForce® 7, 0000002383](#).
8. **Engines with ESN prior to 5345392**, install flywheel housing, power steering idler gear assembly, kit-supplied crankshaft rear oil seal carrier and gasket, and kit-supplied rear crankcase carrier assembly. Refer to [Engine Service Manual, 2010 MaxxForce® 7, 0000002383](#).
9. Install transmission. Refer to appropriate manual for transmission installed on vehicle.
10. Lower and latch hood.
11. Remove wheel chocks.

WARRANTY INFORMATION

Not Applicable

Standard Repair Time(s):

Not Applicable

OTHER RESOURCES

[Master Service Information Site](#)



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